QR CODE GENERATOR

MINI PROJECT - I

Submitted by

GURU PRASATH.D

Roll No: 727622MCA057

In partial fulfillment for the requirements

for the award of the degree of

Master of Computer Applications

Dr. MAHALINGAM COLLEGE OF

ENGINEERING AND TECHNOLOGY

POLLACHI-642 003

(Approved by AICTE, Affiliated to Anna University

and Accredited by NBA & NAAC with 'A++' Grade)

JANUARY-2023

Dr. MAHALINGAM COLLEGE OF ENGINEERING

AND TECHNOLOGY POLLACHI – 642 003

Department of Computer Applications

MINI PROJECT - I

JANUARY 2023

This is to certify that the project entitled

QR CODE GENERATOR

is the bonafide record of project work done by

GURU PRASATH.D

Roll No: 727622MCA057

Of Master of Computer Applications during the year 2022-2024

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Project Guide	Head of the Department
Mrs.V.SATHYA,MCA.,	**Dr.R.MUTHUSAMI, MCA.,M.Phil.,Ph.D**
Assistant professor/MCA	**Assistant Professor(SG)/MCA**

Submitted for the Project Viva-Voce examination held on _____

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Internal Examiner	External Examiner

DECLARATION

DECLARATION

I affirm that the mini project work titled "**QR CODE GENERATOR**" being submitted in partial fulfillment for the award of **Master of Computer Applications** is the original work carried out by me. It has not formed the part of any other project work submitted for award of any degree or diploma, either in this or any other university.

(Signature of the Candidate)
GURU PRASATH.D
Roll No:727622MCA057

I certify that the declaration made above by the candidate is true.

(Signature of the Guide)
Mrs. V. SATHYA,MCA.,
AssistantProfessor/MCA.

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

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I express my sincere thanks to **Dr.P.GOVINDASAMY, B.E.,M.E., Ph.D., Principal, Dr. Mahalingam College Of Engineering And Technology,** Pollachi, for having provided me the facilities to do the project successfully.

I own deep sense of gratitude to **Dr. R. MUTHUSAMI, MCA.,M.Phil., Ph.D., Assistant Professor(SG) & Head, Department of Computer Applications** for appreciating my goal. I express my sincere thanks for him for his constant encouragement.

I express my thanks to **Mrs. V. SATHYA, MCA, Assistant Professor, Department of Computer Applications** for her valuable guidance and support to meet the successful completion of my project.

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ABSTRACT

This project is entitled as **QR CODE GENERATOR.** It creates a QR code for a particular string or URL.to create a QR code generator using python the GUI of the project we are going to use the tkinter module and its built function. For creating a QR code we are going to use the pyqr code library. the user will have the entry field to to enter the URL or the string and a QR code will be generated accordingly and will be save in the system. It is an application that takes in a URL or a string and creates a QR code for it. Here we can save the generated QR code as an image with the .png extension.

INTRODUCTION

CHAPTER 1

INTRODUCTION

OBJECTIVE

The main objective of the project is to make the user to easily access and to make the use of QR Code in a meaningful manner. This project is a python-based made by **tkinter** module.

This is the QR “Quick response”. A piece of long multilingual textbook, a linked URL ,an automated SMS communication, a business card or just about any information can embedded in the two-dimensional barcode. coupled with moderate equipped mobile bias QR canons connect the druggies to the information snappily and fluently. The low specialized hedge of creating and reading QR canons allows innovative preceptors to incorporate them into their educational endeavours.

The pyqr module is a QR law creator that’s simple to use written in pure python. the module is compatible with python 2.6,2.7 and 3x.QR canons can be saved as SVG,EPS,PNG(by using the PNG module),and plain textbook. PIL is not used to render the image lines.QR canons can be saved as SVG, EPS, PNG(by using the pypng module), and plain textbook. PIL isn't used to render the image lines. QR canons can be saved as SVG, EPS, PNG(by using the pypng module), and plain textbook.

SYSTEM ANALYSIS

CHAPTER 2

SYSTEM ANALYSIS

2.1 EXISTING SYSTEM

The existing system of a quick response code or a QR code is a two dimensional bar code used for its fast readability and comparatively large storage capacity.it consists of black squares grid on a white background.

2.1.1 Drawbacks of the existing system

- Timeline for each user.
- No many options.
- Individual access.

2.2 PROPOSED SYSTEM

A QR Code uses four more advanced error correction mechanism and are more standardized encoding and all the QR associated information remains stored. It is a user-friendly application .

2.2.1 Advantages of the proposed system

- It can be scanned anytime.
- Almost free and inexpensive.
- It stores large amount of information.

2.3 FEASIBILITY STUDY

An important outcome of the preliminary investigation is the determination that the system requested is feasible .A feasibility study is carried out to select the best system that meets the performance requirements. A feasibility study is both necessary and prudent to evaluate the feasibility of the project at the earliest possible time.

2.3.1 TECHNICAL FEASIBILITY

Technical feasibility is one of the first studies that must be conducted after the project has been identified. Any system developed must not have a high demand on the available technical resources. This leads to high demands on the available technical resources.

2.3.2 ECONOMICAL FEASIBILITY

Economical feasibility is the cost and logical outlook for this project. In economic study analyses data to determine whether the cost ultimately profitable to the user. It is easy for the users to just overcome and to ask the queries to the bot and get answers necessary to them without any difficulties. Due to this it is economically feasible.

2.3.3 OPERATIONAL FEASIBILITY

Assessing operational feasibility is to gain understanding of whether the proposed system is to solve the user problem or take advantage of the opportunities or not. It is important to understand how the new system will fetch into the current day-today operations of the organization. Operational feasibility studies are generally utilized to process, evaluation implementation and resistance.

SYSTEM SPECIFICATION

CHAPTER 3

SYSTEM SPECIFICATION

3.1 HARDWARE SPECIFICATION

Processor : Intel core i3

RAM : 4GB

Hard Disk : 512 GB

3.2 SOFTWARE SPECIFICATION

Operating System : Windows 10

Front-end : Python (3.11.1), tkinter

IDE : Visual Studio Code

SOFTWARE DESCRIPTION

CHAPTER 4

SOFTWARE DESCRIPTION

4.1 PROGRAMMING LANGUAGES

4.1.1 FRONT END

Python is a programming language that lets you work more quickly and integrate your systems more effectively.

PYTHON:

Python is a high-level, interpreted .general-purpose programming language Its design philosophy emphasizes code readability with the use of significant indentation.
Python is dynamically-typed and garbage-collected.

PERFORMANCE

Python is a powerful and versatile higher-order programming language. Whether you're developing a web application or working with machine learning ,this language has you covered. Python does well at optimizing developer productivity. You can quickly create a program to solve a business problem or fills a practical need. However ,the solutions you reach when developing quickly aren't always optimized for python performance.

ADVANTAGES

- Presence of third-party modules
- Extensive support libraries(Num Py for numerical calculations ,pandas for data analysis ,etc.)
- Open source and large active community base..
- User-friendly data structures.
- High-level language.

OPEN SOURCE

All modern versions of Python are copyrighted under a GPL-compatible license certified by the Open Source Initiative. The Python logo is trademarked but allows for customization(see full license for details).You can download the Python source code here.

PLATFORM INDEPENDENT

Python programs are platform independent because they can be run on different platforms using an interpreter built specifically for that platform.

PROJECT DESCRIPTION

CHAPTER 5

PROJECT DESCRIPTION

5.1 PROBLEM DEFINITION

The QR code maker is a software online that allows user to create or generates QR code by entering desired information. And download them in a different formats of PNG, JPG, SVG. And it is used to provide easy access to online information through the digital camera or smartphone or tablet.

5.2 OVERVIEW OF THE PROJECT

The main objective of the project is to make the user to easily access and make use of QR generator in a meaningful manner .targeted to mobile users and helps to reach your target audience and connect them directly to your digital platforms.in plenty terms of optimizing your marketing campaign.

5.3 MODULE DESCRIPTION

5.3.1 MODULES

- **Link Module**

  The user gives the input to the application to the system.

- **QR Module**

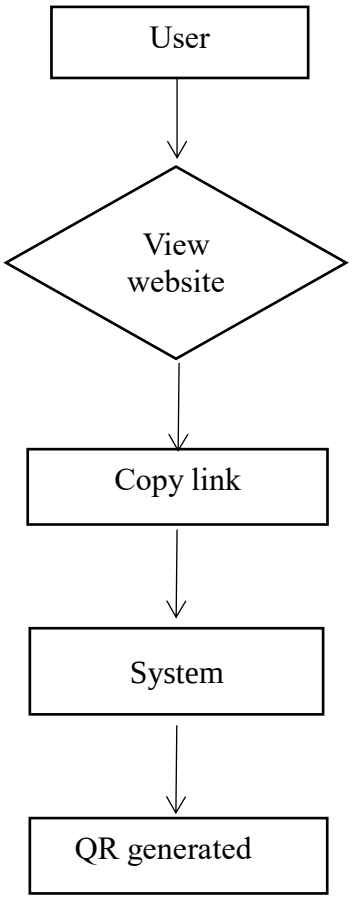
  It generates the QR to the user.

- **System**

  The system displays the output to the user wants to know.

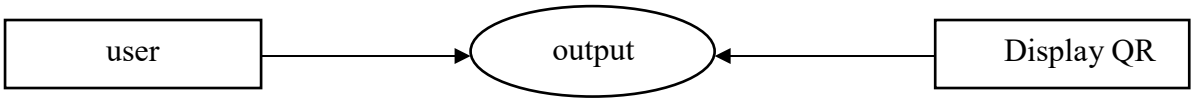
5.4 SYSTEM DESIGN

5.4.1 System Design

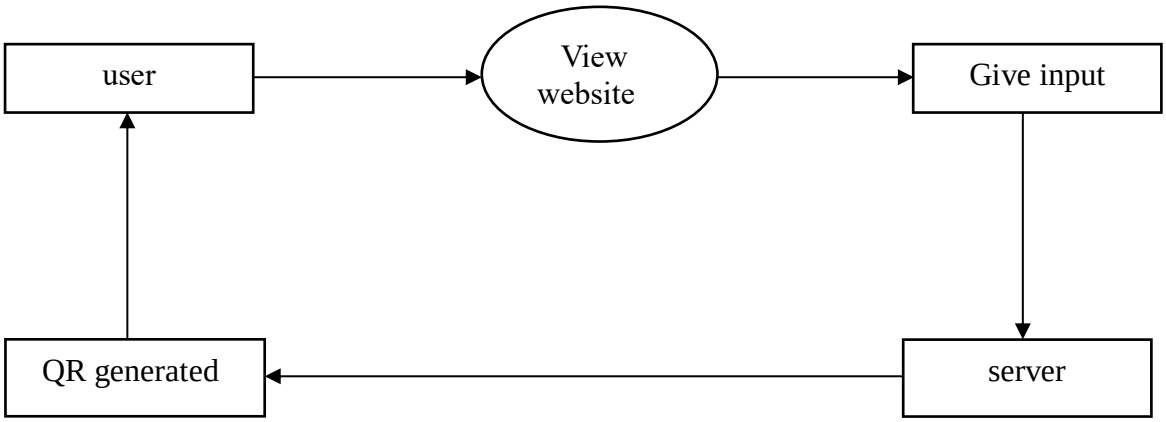


5.4.2 Data Flow Diagram

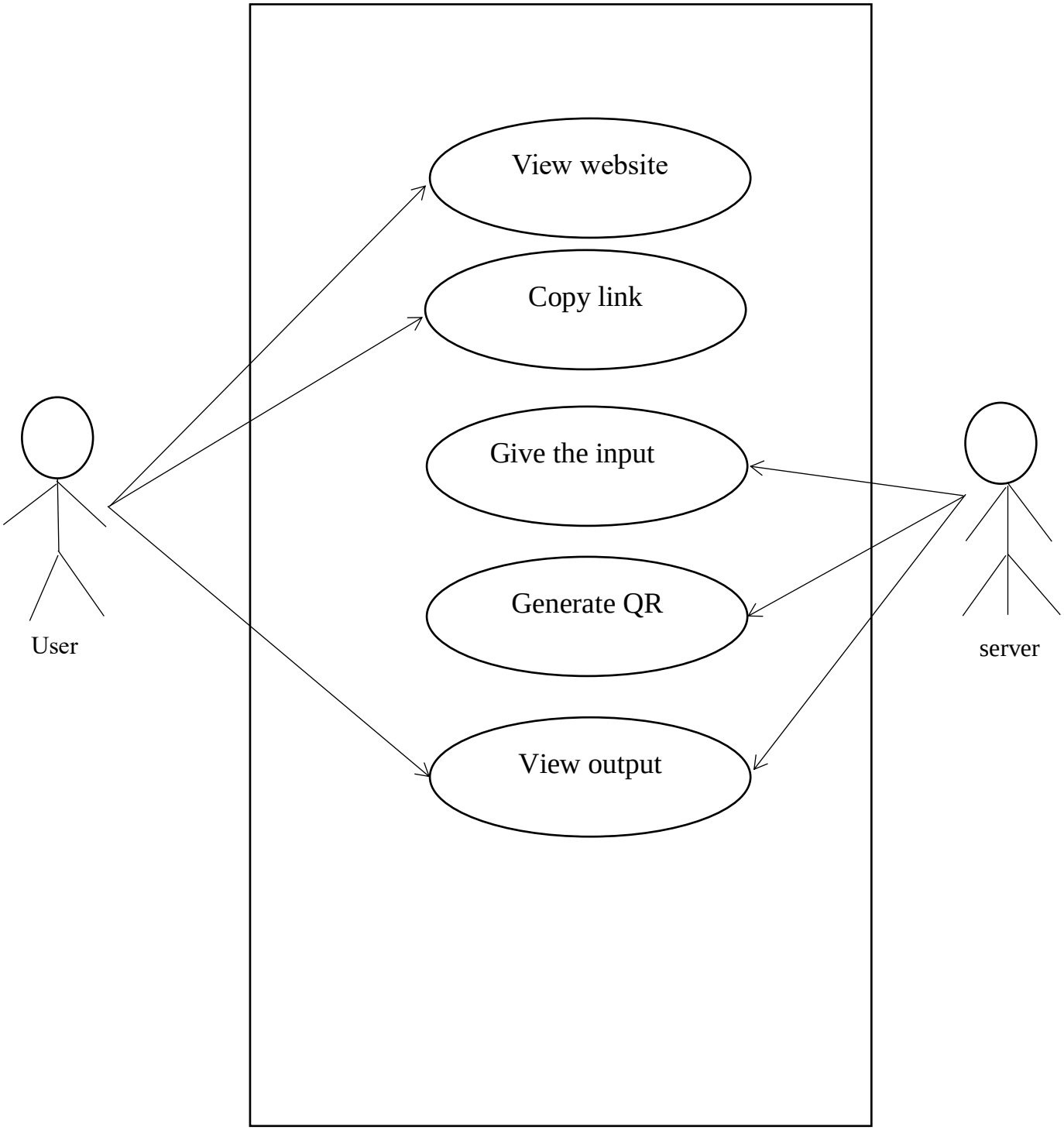
Level 0 :



Level 1:



5.4.3 Use Case Diagram



5.5 INPUT DESIGN

Input design is the link that ties the information system into the world of its users. The input design involves determining the inputs, validating the data ,minimizing the data entry and provides a multi-user facility. Inaccurate inputs are the most common cause errors in the data processing Errors entered by the data entry operators can be controlled by input design.

5.7 OUTPUT DESIGN

Computer output is the most important and direct source of information to the user. During output design, developers identify the type of outputs needed, and consider the necessary output controls and prototype report layouts. Allowing the user to view the sample screen is important because the user is the ultimate judge of the quality of the output.

CHAPTER 6

SYSTEM TESTING

System testing includes testing of a fully integrated software system. Generally, a computer system is made with the integration software(any software is only a single element of a computer system).the software is developed in units and then interfaced with other software and hardware to create a complete computer system. In other words, a computer system consists of a group of software to perform the various tasks, but only software cannot perform the task.

System testing is a series of different type of tests with the purpose to exercise and examine the full working of an integrated software computer system against requirements.to check end-to-end flow of an application or the software as a user is known as System testing.

The purpose of testing is to discover errors. Testing is the process of trying to discover conceivable fault or weakness in a work product provides a way to check the functionality of components, sub-assembles or a finished products in the process of exercising software with the internet of ensuring that the software needs a requirements and the user expectations and does not fail in an unacceptable manner.

6.1 TESTING METHODOLOGY`

6.1.1 UNIT TESTING

Unit testing involves the design of the test cases that validate that the internal program logic is functioning properly input procedures valid output. All decision branches and internal code flow should be validated. The testing of individual software units of application and system configuration. unit test ensure the each unique path of business process perform accurately to the documented specification and contains clearly identified inputs and expected results.

6.1.2 FUNCTIONAL TESTING

Functional tests provide systematic demonstration that functions based are available as specified by the business and technical requirements, system documentation and user manuals. functional testing is centered on the following.

6.1.3 INTEGRATION TESTING

Integration tests are designed to test integrated software components to determine if the user actually run as program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of the components is correct and consistent. Integration testing is specifically aimed at exposing the problem that arise at exposing the problems that arise from the combination of the components.

6.2 TEST CASES

TEST CASE ID	TEST CASE NAME	TEST CASE DESCRIPTION	TEST PRIORITY STEP	TEST PRIORITY RESULT	RESULT
1.	**QR**	To Generate QR	Displays the QR that the user gives the input.	Accept If the QR is generated	Success
		Cannot Generated	Not display the QR	Not generated	fail

SYSTEM IMPLEMENTATION

CHAPTER 7

SYSTEM IMPLEMENTATION

System implementation is the important stage of the project when the theoretical design is tuned into practical system. After proper testing and validation system implementation is done .System implementation includes all those activities that take place to convert an ld system to the new one. Replacing an existing system may be a major modification to an existing system.

There are types of implementation:

- Implementation of compute system to replace a manual system.
- Implementation of compute system to replace an existing system.

7.1 IMPLEMENTATION PROCEDURE

Implementation is the stage which is critical in the life cycle of the new system designed. The main stage of the implementation is planning ,training ,system testing. Implementation is converting or revised system into operational one. It is the process of changing from the old system to the new one. After system is implemented conducts review of the system. It is used for gather information by the maintenance of the system.

7.2 USER TRAINING

User training cannot be provided for every user in the organization. So in-order to make a understandable and usuable to every user, the screen share provided efficiently and user friendly so that even a user can able to work.

CONCLUSION AND FUTURE ENHANCEMENT

CHAPTER 8

CONCLUSION

QR are common time keeping features. These functions are so frequently used that is difficult to imagine modern life without a time keeping applictions now a days. still QR do not feel to be provident to shoot data because it's decrypted with any good phones with QR app anthology and causing data. It should store a large volume and mistreatment and hand-held like smartphones it must be at high speed.

FUTURE ENHANCEMENT

It can store contents of similar as textbook, URL links ,automatic SMS dispatches, or any information that can be well-established in a two-dimensional .The programmed data can by surveying the mobile device that's equipped with a camera and QR anthology software. The experimental results show that tendency to contemplate a QR code with the success handed.

APPENDICES

CHAPTER 9
APPENDICES

SOURCE CODE

```
From tkinter import *
From tkinter import  message box
From tkinter.filedialog import askopenfilename
Import os
Import shutil
Import barcode
From barcode.writer import ImageWriter
From MyQR import myqr
Import csv
From datetime import datetime

S=0
#Creating the base window for the GUI
Window = Tk()
Window.resizable(width = False, height = False)
Window.title("QR and Bar Code Generator")
Window.iconbitmap("icon.ico")

#func to set size
Def setsize(a):
    Global s
    S=a
    Messagebox.showinfo("","Select format")

Def open_file():
    Tk().withdraw() # we don't want a full GUI, so keep the root window from appeari
ng
    File = askopenfilename() # show an "Open" dialog box and return the path to the s
elected file
    Return file

#fucn to store data in csv files
Def storedata():
    If not os.path.isfile(os.getcwd() + \\QrCode and Barcode Datas.csv):
          With open("QrCode and Barcode Datas.csv","w",newline="") as codes:
             Fields=["Subject","Type","Timestamp"]
             Writer=csv.DictWriter(codes,fieldnames =fields)
             Writer.writeheader()
    With open("QrCode and Barcode Datas.csv","a", newline="") as codes:
       Writer=csv.writer(codes)
```

```
    If type1==1:
        Writer.writerow([Subject.get(),"Qrcode",timestampStr1])
      Elif type1==2:
        Writer.writerow([Subject.get(),"Barcode",timestampStr2])



#function generate the qr code
Def generate():
   If len(name.get())!=0 and name.get() != "Enter filename here" and len(Subject.get(
))!=0 and Subject.get() != "Enter subject here":
      If '/' not in name.get():
        Global qr, photo, filename, save_dir, timestampStr1,type1
        Filename = open_file()
        Version, level, qr = myqr.run( Subject.get(), version=1, level='H', picture=fil
ename, colorized=True, contrast=1.0, brightness=1.0, save_name=name.get()+".png",
 save_dir=os.path.join(os.getcwd(), "src"))
        dateTimeObj = datetime.now()
        timestampStr1 = dateTimeObj.strftime("%d-%b-%Y (%H:%M:%S.%f)")
        type1 = 1
        storedata()
        try: showcode()
        except: pass
      else: messagebox.showinfo("","filename can't contains '/'")
   else:
      messagebox.showinfo("","Please Enter some filename or subject")

#func to generate Barcode
Def bargenerate():
   If len(name.get())!=0 and name.get() != "Enter filename here" and len(Subject.get(
))!=0 and Subject.get() != "Enter subject here":
      If '/' not in name.get():
        Global brcode, fpath, type1,timestampStr2
        Brcode=barcode.get("code128", Subject.get(), writer=ImageWriter() )
        Brcodesvg=barcode.get("code128", Subject.get() )
        Dummy = os.getcwd()+\\images
        If not os.path.exists(dummy):
          Os.makedirs(dummy)
        Fpath=os.path.join(dummy,name.get())
        Brcode.save(fpath)
        dateTimeObj = datetime.now()
        timestampStr2 = dateTimeObj.strftime("%d-%b-%Y (%H:%M:%S.%f)")
        type1 = 2
        storedata()
        try: showbrcode()
```

```
            except: pass
        else: messagebox.showinfo(“”,”filename can’t contains ‘/””)
    else:
        messagebox.showinfo(“”,”Please Enter some filename or subject”)


#func to save barcode in png format
Def brsave():
    Try:
        If len(name.get())!=0 and name.get() != “Enter filename here”:
            Dir = “Bar_Codes”
            If not os.path.exists(dir):
                Os.makedirs(dir)
            Spath=os.path.join(dir,name.get())
            Brcode.save(spath)
            Os.remove(fpath+”.png”)
            Messagebox.showinfo(“”, “Barcode saved in png format”)
        Else:
            Messagebox.showinfo(“”,”Please enter a File Name”)
    Except:
        Messagebox.showinfo(“”,”Generate the Bar code first!”)



#function to show the qr code
Def showcode():
    Global photo
    Photo = PhotoImage(file = os.path.join(os.getcwd(), “src”) + “/” + name.get()+”.p
ng”)
    imageLabel.config(image = photo)
    subLabel.config(text=”QR of “ + Subject.get())

#func to show barcode
Def showbrcode():
    Global photo1
    Photo1 = PhotoImage(file= fpath +”.png”)
    imageLabel.config(image = photo1)
    subLabel.config(text=””)



#function to save the generated code locally in png format
Def save():
    Dir = “QR_Codes”
    If not os.path.exists(dir):
        Os.makedirs(dir)
```

```
    Try:
        If len(name.get())!=0 and name.get() != “Enter filename here”:
            If s == 0:
                Messagebox.showinfo(“alert”, “Select size first”)
            Else:
                Version, level, qr = myqr.run( Subject.get(), version=1, level=’H’, picture=
filename, colorized=True, contrast=1.0, brightness=1.0, save_name=name.get()+”.pn
g”, save_dir=os.path.join(os.getcwd(), “QR_Codes”))
                Os.remove (os.path.join(“src”,name.get())+”.png”)
                Messagebox.showinfo(“”,”Saved”)
        Else:
            Messagebox.showinfo(“”,”Please enter a File Name”)
    Except:
        Messagebox.showinfo(“”,”Generate the QR code first!”)



 #function to save the generated code locally in svg format
 Def svg():
    Dir = “QR_Codes”
    If not os.path.exists(dir):
        Os.makedirs(dir)
    If not os.path.exists(‘src/’+Subject.get()+’.png’):
            Version, level, qr = myqr.run( Subject.get(), version=1, level=’H’, picture=fil
ename, colorized=True, contrast=1.0, brightness=1.0, save_name=Subject.get()+”.png
”, save_dir=os.path.join(os.getcwd(), “src”))
    Shutil.copyfile(‘src/’+Subject.get()+’.png’, ‘QR_Codes/’+Subject.get()+’.svg’)
    Os.remove(os.path.join(“src”,Subject.get())+”.png”)
    Messagebox.showinfo(“”,”Saved”)

 #dummy func
 Def dummy():
    Try:
        If len(name.get())!=0 and Subject.get() != “Enter subject here” and name.get() !
= “Enter filename here”:
            Messagebox.showinfo(“”,”Select size”)
        Else:
            Messagebox.showinfo(“”,”Please enter a File Name”)
    Except:
        Messagebox.showinfo(“”,”Generate the QR code first!”)


 #func to clear out any entry boxes when the user shifts focus
 Def clear_widget(event):
    If SubEntry == window.focus_get() and SubEntry.get() == “Enter subject here”:
        SubEntry.delete(0, END)
```

```
    Elif nameEntry == window.focus_get() and nameEntry.get() == “Enter filename h
ere”:
        nameEntry.delete(0, END)


#func to repopulate the default text previously inside the entry boxes if nothing is puti
n
 #while focused and changes focus to another widget
 Def repopulate_defaults(event):
    If SubEntry != window.focus_get() and SubEntry.get() == “”:
        SubEntry.insert(0, “Enter subject here”)
    Elif nameEntry != window.focus_get() and nameEntry.get() == “”:
        nameEntry.insert(0, “Enter filename here”)


 #designing the GUI
 F=Frame(window)
 f.grid(row=0, column=0 ,sticky=N+S+W+E)

 Subject = StringVar()
 SubEntry = Entry(f,textvariable = Subject,width=50, font=(“gothic”, 12))
 SubEntry.grid(row =0,column =0,columnspan=5,sticky=N+S+W+E)
 SubEntry.insert(END,”Enter subject here”)
 SubEntry.bind(“<FocusOut>”, repopulate_defaults)
 SubEntry.bind(“<FocusIn>”, clear_widget)

 Name = StringVar()
 nameEntry = Entry(f,textvariable = name, width=50, font=(“gothic”, 12))
 nameEntry.grid(row =1,column =0, columnspan=5,sticky=N+S+W+E)
 nameEntry.insert(0,”Enter filename here”)
 nameEntry.bind(“<FocusOut>”, repopulate_defaults)
 nameEntry.bind(“<FocusIn>”, clear_widget)


 f2=Frame(window)
 f2.grid(row=2, column=0, sticky=N+S+W+E)


s1 = Button(f2,text = “Qr code”,width=9 , command = generate , font=(“Helvetica”, 1
2))
 s1.grid(row =0,column =0,sticky=N+S+W+E)

 s1 = Button(f2,text = “Save”,width=9, command = dummy , font=(“Helvetica”, 12))
 s1.grid(row =0,column =1,sticky=N+S+W+E)

 s1=Label(f2,text=” “, width=3)
```

```
s1.grid(row=0,column=2,sticky=N+S+W+E)


s1 = Button(f2,text = “Bar code”,width=9 , command = bargenerate , font=(“Helvetic
a”, 12))
s1.grid(row =0,column =3,sticky=N+S+W+E)

s1 = Button(f2,text = “Save”,width=9 , command = brsave , font=(“Helvetica”, 12))
s1.grid(row =0,column =4,sticky=N+S+W+E)


f3= Frame(window)
f3.grid( row=3, column=0, columnspan=2, sticky=N+S+W+E)


s1 = Button(f3,text = “Small”,width=4, command = lambda: setsize(8) , font=(“Helve
tica”, 12))
s1.grid(row =0,column =0,sticky=N+S+W+E)


s1 = Button(f3,text = “Medium”,width=7, command = lambda: setsize(10),  font=(“H
elvetica”, 12))
s1.grid(row =0,column =1,sticky=N+S+W+E)


s1 = Button(f3,text = “Large”,width=6, command = lambda: setsize(16) ,font=(“Helv
etica”, 12))
s1.grid(row =0,column =2,sticky=N+S+W+E)

f4=Frame(window)
f4.grid( row=4, column=0, columnspan=2, sticky=N+S+W+E)

saveB = Button(f4,text=”PNG”,width=9,command = save, font=(“Helvetica”, 12))
saveB.grid(row =1,column =0,sticky=N+S+W+E)

saveC = Button(f4,text=”SVG”,width=9,command = svg , font=(“Helvetica”, 12))
saveC.grid(row =1,column =1,sticky=N+S+W+E)



imageLabel = Label(window)
imageLabel.grid(row =5,column =0,sticky=N+S+W+E)


subLabel = Label(window,text=””)
subLabel.grid(row =6,column =0,sticky=N+S+W+E)
```

```
#making the GUI resposnsive
Rows = 6
Columns = 4

For row in range(Rows+1):
   Window.grid_rowconfigure(row,weight=1)

For col in range(Columns+1):
   Window.grid_columnconfigure(col,weight=1)


#looping the GUI
Window.mainloop()
```

9.2 SCREEN SHOTS

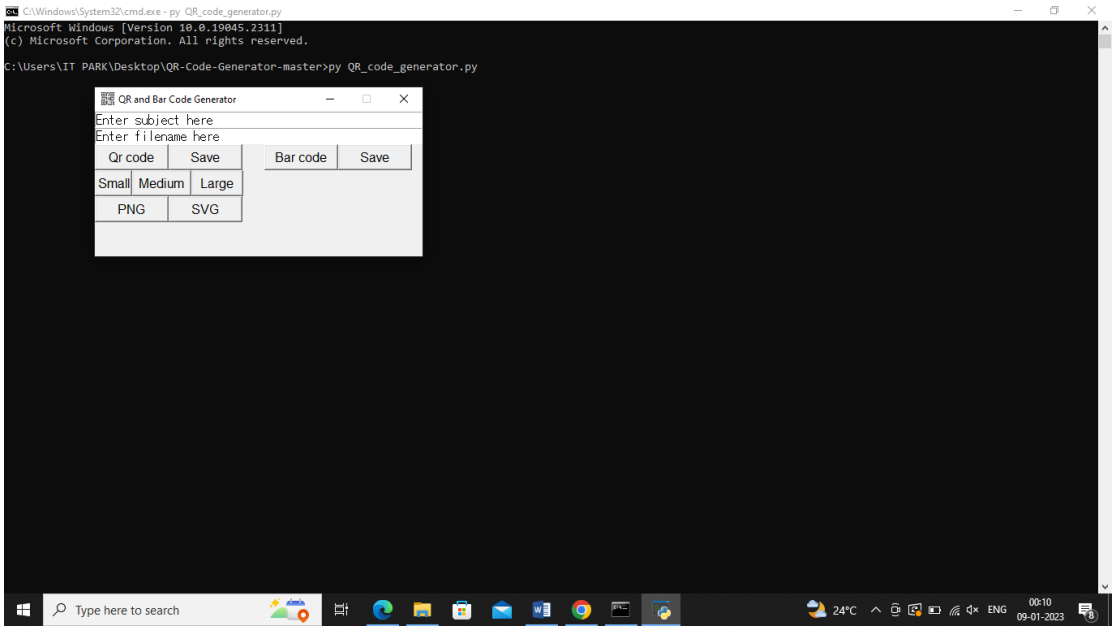


Fig 9.2.1 Enter the link here

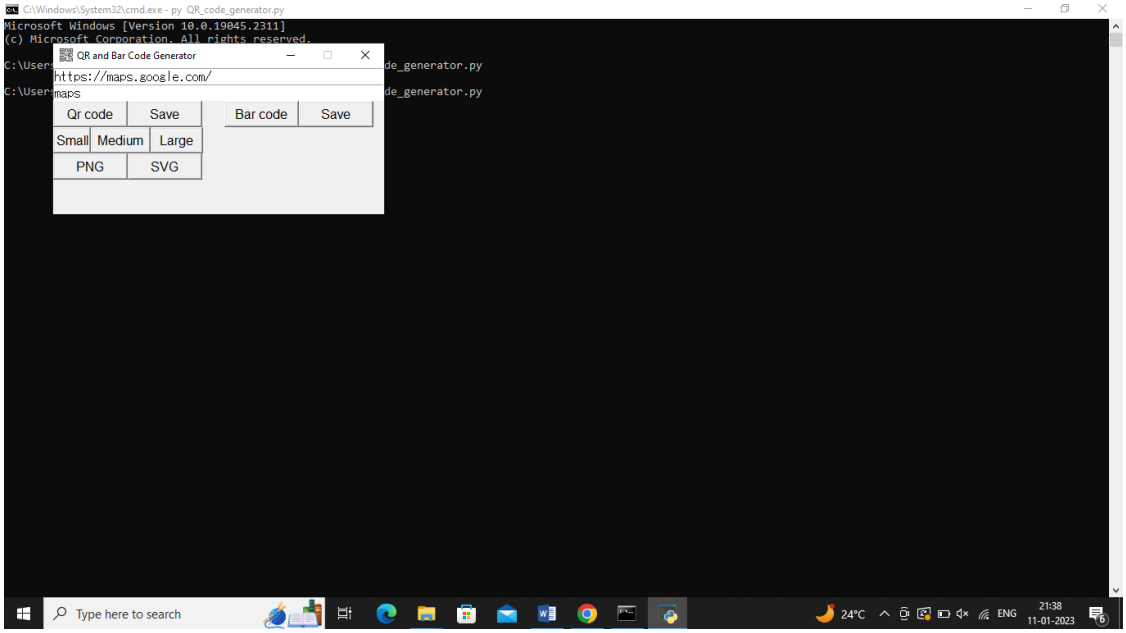


Fig 9.2.2 User can view the link

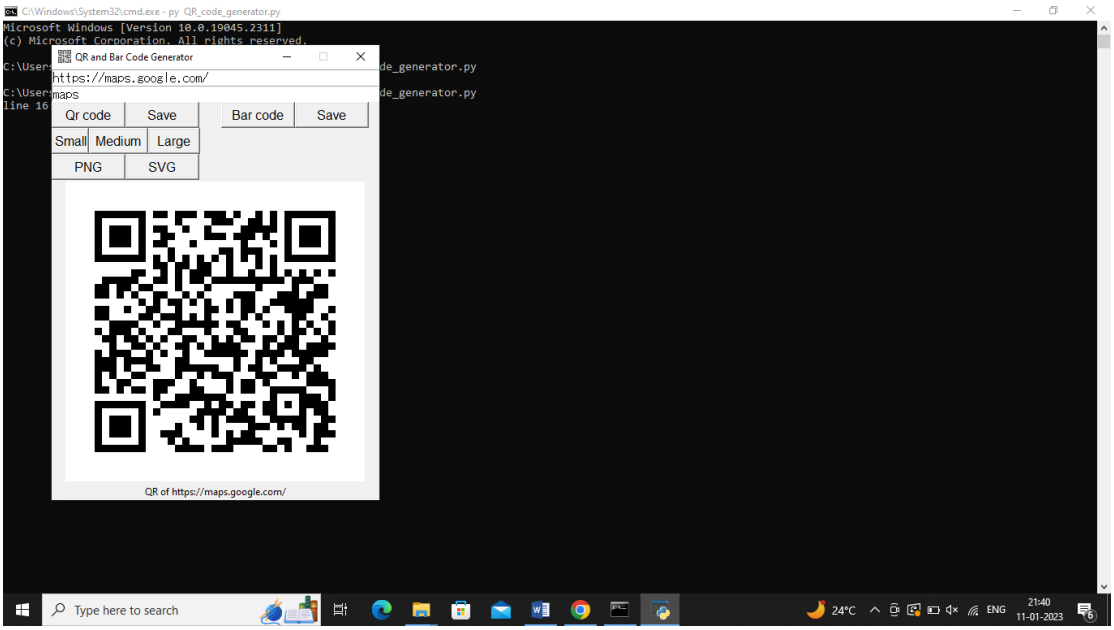


Fig 9.2.3 QR generated

REFERENCES

REFERENCES

CHAPTER 10

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